

What is claimed is:

1. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

(b) a mounting base subsystem removably coupled to said memory subsystem; and

(c) electronic circuits for electronically accessing said memory subsystem, wherein said electronic circuits provide an ETHERNET access port for coupling said hardened voyage recorder to an ETHERNET network.

2. A hardened voyage data recorder according to claim 1 wherein said electronic circuits include firmware which provides TCP/IP access over ETHERNET to said circuits.

3. A hardened voyage data recorder according to claim 2 wherein said firmware includes web pages for configuring said hardened voyage data recorder.

4. A hardened voyage data recorder according to claim 1 wherein said electronic circuits are located in said mounting base subsystem.

5. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes at least one watertight cable connector.

5

6. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes a first watertight cable connector for coupling with a power supply and a second cable connector for coupling with an ETHERNET network.

10

7. A hardened voyage data recorder according to claim 1 wherein said electronic circuits accept both 110/220 VAC and 24 VDC power supplies.

15

8. A hardened voyage data recorder according to claim 1 further comprising a quick release V-clamp, wherein said removable memory subsystem has a lower flange, said mounting base subsystem has an upper flange, and said quick release V-clamp engages said upper flange and said lower flange whereby said memory subsystem and said base subsystem are removably coupled to each other.

20

25

9. A hardened voyage data recorder according to claim 8
wherein said quick release V-clamp has two quick release
5 levers.

10. A hardened voyage data recorder according to claim 1
wherein said removable memory subsystem includes non-
10 volatile memory enclosed within a boiler.

11. A hardened voyage data recorder, comprising:

15 (a) a removable memory subsystem having a lower
flange;

(b) a mounting base subsystem having an upper
flange; and

20 (c) a quick release V-clamp engaging said upper
flange and said lower flange whereby said
memory subsystem and said base subsystem are
removably coupled to each other.

25 12. A hardened voyage data recorder according to claim
11 wherein said quick release V-clamp has two quick
release levers.

18. A hardened voyage data recorder, comprising:

- 5 (a) a removable memory subsystem; and
- (b) a mounting base subsystem removably coupled to
said memory subsystem, wherein said removable
memory subsystem includes non-volatile memory
10 enclosed within a boiler.

19. A hardened voyage data recorder according to claim
18 wherein said mounting base subsystem includes at least
15 one watertight cable connector.

20. A hardened voyage data recorder according to claim
18 wherein said mounting base subsystem includes a first
20 watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.

25. A hardened voyage data recorder according to claim
24 further comprising one o-ring and one mesh gasket, one
5 disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric
grooves.

10 26. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

15 (b) a mounting base subsystem removably coupled to
said memory subsystem; and

(c) at least one memory interface converter chip
coupled to said removable memory subsystem.

20

27. A hardened voyage data recorder according to claim
26 wherein said mounting base subsystem includes at least
one watertight cable connector.

28. A hardened voyage data recorder according to claim
26 wherein said mounting base subsystem includes a first
watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.

29. A hardened voyage data recorder according to claim 26 further comprising a quick release V-clamp, wherein said removable memory subsystem has a lower flange, said mounting base subsystem has an upper flange, and said quick release V-clamp engages said upper flange and said lower flange whereby said memory subsystem and said base subsystem are removably coupled to each other.

30. A hardened voyage data recorder according to claim 29 wherein said quick release V-clamp has two quick release levers.

31. A hardened voyage data recorder according to claim 29 wherein one of said upper flange and said lower flange has a groove adapted to receive an O-ring.

32. A hardened voyage data recorder according to claim 29 wherein said upper flange has two concentric grooves, each adapted to receive an O-ring.

5

33. A hardened voyage data recorder according to claim 32 further comprising one o-ring and one mesh gasket, one disposed in one of said two concentric grooves and the other disposed in the other of said two concentric grooves.

10

34. A hardened voyage data recorder, comprising:

15

- (a) a removable memory subsystem, wherein said removable memory subsystem includes a stacked memory and a plurality of memory interface chips arranged for communication with a processor such that a large number of memory chips may be driven; and

20

- (b) a mounting base subsystem removably coupled to said memory subsystem.

25

35. A hardened voyage data recorder according to claim 34 wherein said mounting base subsystem includes at least one watertight cable connector.

36. A hardened voyage data recorder according to claim
34 wherein said mounting base subsystem includes a first
5 watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.

10 37. A hardened voyage data recorder according to claim
34 further comprising a quick release V-clamp, wherein
said removable memory subsystem has a lower flange, said
mounting base subsystem has an upper flange, and said
quick release V-clamp engages said upper flange and said
15 lower flange whereby said memory subsystem and said base
subsystem are removably coupled to each other.

38. A hardened voyage data recorder according to claim
20 37 wherein said quick release V-clamp has two quick
release levers.

39. A hardened voyage data recorder according to claim
25 37 wherein one of said upper flange and said lower flange
has a groove adapted to receive an O-ring.

40. A hardened voyage data recorder according to claim
37 wherein said upper flange has two concentric grooves,
5 each adapted to receive an O-ring.

41. A hardened voyage data recorder according to claim
40 further comprising one o-ring and one mesh gasket, one
10 disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric
grooves.

42. A process for fabricating a hardened voyage data
15 recorder, comprising the steps of:

(a) utilizing a removable memory subsystem;

(b) removably coupling said memory subsystem to a
20 mounting base subsystem; and

(c) accessing said memory subsystem electronically
utilizing electronic circuits, wherein said
electronic circuits provide an ETHERNET access
25 port for coupling said hardened voyage recorder
to an ETHERNET network.

43. A process for fabricating a hardened voyage data recorder, comprising the steps of:

5 (a) utilizing a removable memory subsystem having a lower flange;

(b) utilizing a mounting base subsystem having an upper flange; and

10 (c) removably coupling said memory subsystem and said base subsystem to each other utilizing a quick release V-clamp engaging said upper flange and said lower flange.

15 44. A process for fabricating a hardened voyage data recorder, comprising the steps of:

(a) utilizing a removable memory subsystem; and

20 (b) removably coupling a mounting base subsystem to said memory subsystem, wherein said removable memory subsystem includes non-volatile memory enclosed within a boiler.

25

45. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a removable memory subsystem;
- (b) removably coupling a mounting base subsystem to said memory subsystem; and
- (c) coupling at least one memory interface converter chip to said removable memory subsystem.

46. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a memory subsystem including a stacked memory and a plurality of memory interface chips arranged for communication with a processor such that a large number of memory chips may be driven; and
- (b) removably coupling a mounting base subsystem to said memory subsystem.